

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Patent Application of

Kenichi FUNAMOTO et al.

Serial No. 09/395,179

Filed: September 14, 1999

For: PACKAGE FOR ELECTRONIC
COMPONENT, LID MATERIAL FOR
PACKAGE LID, AND PRODUCTION
METHOD FOR LID MATERIAL

Group Art Unit: 1775

Examiner: M. LaVilla

AET / Bacon
#14
6/21/02

RESPONSE

Commissioner of Patents
Washington, DC 20231

Sir:

This is a full and timely response to the non-final Official Action mailed February 6, 2002. Reexamination and reconsideration of claims 13 to 24 in light of the above amendments and the following remarks are courteously requested.

In the Office Action, the Examiner rejected claims 13 to 24 under 35 U.S.C. § 112, second paragraph as being indefinite. The Examiner asserts that the term "nickel-based metal" may or may not include Group VIIA elements in place of nickel, and consequently asserts that the claims are not clear. It is respectfully pointed out that the specification does not teach that other Group VIIA elements such as Pd or Pt can be used in place of nickel. Further, the explicit wording of the claims, including the phrase "mainly comprising

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nickel," does not lend itself to an unclear interpretation. Consequently, it is respectfully requested that these rejections be withdrawn.

The Examiner rejected claims 13 to 24 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,737,418 ("Slattery"). These rejections are respectfully traversed.

Claim 1 recites a lid material which includes a nickel-based metal layer that is press- and diffusion-bonded onto a core layer. The claim further recites that this **press- and diffusion-bonded nickel-based metal layer** has a maximum-to-minimum thickness ratio $T1/T2$ of 1.4 to 1.5. As is established below, the limitations regarding this press- and diffusion-bonded layer are not met by Slattery.

First, Applicants thank the Examiner for extending the courtesy of granting an interview with Applicants' representative. The Examiner's position during the interview was the same as that which was asserted in the Office Action. The Examiner asserts that Slattery discloses the electrodeposition of nickel (~10 microinches) over the clad nickel layer (~200-350 microinches). This in itself would produce a thickness to thinness ratio, at best, of $210/200 = 1.05$. Clearly, this does not read on the claimed ratio (1.4 to 1.5). However, the Examiner also considers the electrodeposited nickel layer at the edge of the Kovar sheet (~75-300 microinches) as a part of an overall nickel layer.

If both the laminated layer and the electrodeposited layers are considered as a whole, the thickness taught by Slattery could therefore produce a thickness to thinness ratio of $300:200 = 1.5$, which would read on the claimed ratio in present claim 13.

However, claim 1 only refers to a press- and diffusion-bonded nickel-based metal layer when referring to a thickness to thinness ratio. During the Examiner's interview, the Examiner asserted that the claimed ratio is met because process limitations in product-by-process claims are not given patentable weight. Of course, it is also settled law that if the process limitations ascribe a structural feature to the claims, then those process limitations will be considered for what they establish in terms of structure. During the Examiner's interview, the Examiner encouraged Applicants to submit evidence of such structural features that would set the present invention apart from Slattery.

First, it is pointed out that the both the present inventors and Slattery establish that rolled nickel layers have a much smaller porosity than an electroplated layer, and that the porosity of the nickel layer has important technical implications when it is used to cover a core layer. The product-by-process limitation of forming the nickel-based layer by press-and diffusion-bonding certainly ascribes structural limitations to the layer, particularly regarding

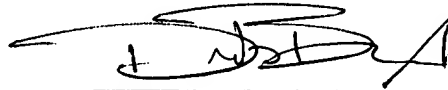
porosity and hermeticity. The Slattery patent teaches these implications with regard to point of corrosion resistance (col. 2, lines 57 to 63). The present application further teaches these implications with regard to the quality of hermeticity for a case that is fuse-bonded with a lid (p. 2, line 9 to p. 3, line 8). See also Slattery, particularly the Abstract, lines 8 to 9; col. 3, lines 30 to 32; col. 4, lines 8 to 9. Finally, the current specification (p. 17, line 7 to p. 19, line 6) goes to great detail in explaining the advantages provided when using a press- and diffusion-bonded nickel-based layer having a thickness to thinness ratio of 1.4 to 15. These advantages would not be provided from a lid that includes a nickel-based over-layer that is partly press- and diffusion-bonded to a core layer, and also is partly applied by way of electrodeposition. Consequently, the claim limitation regarding the thickness to thinness ratio should only be read on by a reference that describes such a limitation with respect to a press- and diffusion-bonded nickel layer, and Slattery fails to do so.

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)." M.P.E.P. § 2143.03. Accord. M.P.E.P. § 706.02(j). Because Slattery fails to teach or suggest a press- and diffusion-bonded nickel-based metal layer, over a

core layer, and that has a maximum-to-minimum thickness ratio $T1/T2$ of 1.4 to 1.5, the rejections under 35 U.S.C. § 103(a) should be withdrawn.

For the foregoing reasons, all the claims now pending in the present application are believed to be clearly patentable over the prior art of record. Accordingly, favorable reconsideration of the claims in light of the above remarks is courteously solicited. If the Examiner has any comments or suggestions that could place this application in even better form, the Examiner is requested to telephone the undersigned attorney at the below-listed number.

Respectfully submitted,



David K. Benson
Registration No. 42,314

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RADER, FISHMAN & GRAUER, PLLC
Lion Building
1233 20th Street, N.W.
Washington, D.C. 20036
Tel: (202) 955-3750
Fax: (202) 955-3751